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Andrej S. Mitrovic

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EXAMINER

SAXENA, AKASH

ART UNIT

PAPER NUMBER

2128

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/673,583	Applicant(s) MITROVIC, ANDREJ S.	
	Examiner Akash Saxena	Art Unit 2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/20/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claim(s) 1-62 has/have been presented for examination based on amendment filed on 20th December 2005.
2. Claim(s) 1-3, 6-7, 13, 28, 55, 62 are amended.
3. Previous non-final office action mailed on 20th September 2005 is incorporated within this office action unless otherwise specified where the more current rejection for the amended claims supercedes the previous rejection.
4. The arguments submitted by the applicant have been fully considered. Claims 1-62 remain rejected. The examiner's response is as follows.

Response to Applicant's Remarks & Examiner's Withdrawals

5. Examiner respectfully withdraws the claim rejection(s) under 35 USC § 102 to claim(s) 1-62 in view of the amendment by applicant. Rejections under 35 USC § 103 are made for claims 1-62 in view of amendments.

Response to Applicant's Remarks for 35 U.S.C. § 101

6. Applicant has argues that claim 62 - "transmission media" to be statutory under 35 USC 101 guidelines. The recent interim 101 guidelines states:

(c) Electro-Magnetic Signals

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O'Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.) 252, 267

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(1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. *A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.*

A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." *Shell Development Co. v. Watson*, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), *aff'd*, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." *Diamond v. Chakrabarty*, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting *American Fruit Growers, Inc. v. Brogdex Co.*, 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See *American Disappearing Bed Co. v. Arnaelsteen*, 182 F. 324, 325 (9th Cir. 1910), *cert. denied*, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have.

Congress can be presumed to be aware of an administrative or judicial interpretation of a statute and to adopt that interpretation when it re-enacts a statute without change. *Lorillard v. Pons*, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in *American Fruit Growers* when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing *W. Robinson, The Law of Patents for Useful Inventions* 270 (1890)).

A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions.

Based on the guidelines above, 35 USC 101 rejections are maintained for claim 44.

Response to Double Patenting

7. Applicant's arguments relating to filing a terminal disclaimer for applications 10/673,501, 10/673,507 and 10/673,138 are considered and double patenting rejection is maintained until a terminal disclaimer is filed. Claim amendment as presented in these application mirror the amendments in the current application.

Response to Applicant's Remarks for 35 U.S.C. § 102

8. Claims 15-16, 42-43 & 61 are held in abeyance of 37 CFR 1.111 and will be addressed later time when these claims may be allowable. Objection is withdrawn till then.
9. Claims 1-11, 3-14, 17-19, 21-27, 28-32, 33-38, 40-41, 44-46, 48-54, 55-57 and 60-62 were rejected under 35 U.S.C. 102(e) as being anticipated by Sonderman.

Regarding Claim 1

Applicant's arguments filed 8th December 2005 have been fully considered but they are not persuasive.

Applicant has argued that new amended limitations (Remarks Pg. 17 & 18 ¶3rd) which are going to be addressed later. Applicant has argued that Sonderman discloses model producing theoretical semiconductor wafer is not the same as first principle model (Remarks: Pg.18¶2). Examiner respectfully disagrees, as there is no evidence presented that would differentiate between the model(s) provided by Sonderman and first principle model as claimed.

Further, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without

specifically pointing out how the language of the claims patentably distinguishes them from the references.

Applicant further argues that Sonderman teaches “run to run” process feedback control (Remarks: Pg.19¶1. Examiner respectfully disagrees, as all the citations provided on pg.14 or remarks from the Sonderman reference do not point towards “run to run” process feedback control. Further, as recited the amended claim language is unclear on the point being argued - “feedback correction on an actual process being performed”.

Hence the arguments related to the feedback control in Sonderman not the same instant application are found to be unpersuasive.

Applicant (Remarks Pg. 20¶2nd) argues the Sonderman Col.9 Lines 1-11, also teaching run-run limitation. The process disclosed there is a generic feedback control process described without any temporal relation specifying how often a feedback is performed. Hence this argument is also found to be unpersuasive.

Applicant (Remarks Pg. 20¶3rd) argues Sonderman does not teach first principle simulation using physical model to provide virtual sensor measurement. Examiner respectfully disagrees, Sonderman teaches performing first principle simulation using the input data and the physical model to provide virtual sensor measurements relating to the process performed by the semiconductor-processing tool (Sonderman: at least in Col.5-7; at least in Col.6 Lines 8-13).

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Applicant (Remarks Pg. 20¶4th) argues relevance of Kee et al reference, which is neither used individually for 35 USC 102(e) nor in combination with Sonderman for 35 USC 103(a) rejection. Hence the arguments related to them are mute.

Applicant (Remarks Pg. 16¶4th) argues preemptively on the teachings of Jain et al. Arguments are considered mute in view that Jain et al has not been applied as yet to the claim rejection. Further, examiner disagrees with applicant that Jain et al teaches only a concept tool, as the abstract of this paper clearly states

"Specifically, we present a mathematic-physical engine (MPE) to **solve in real time, and to display three-dimensionally, the solution of sets of ordinary or partial differential equations.**"

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claim 1-62 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 1

Claim 1 is rejected as it discloses “first principle model describing at least one of a basic physical or chemical attributes” of semiconductor processing tool. The attributes are generically cited and indefinite, making the first principle model indefinite as well.

Claims 28, 55 and 62 are rejected based on the same reason as claim 1.

Dependent claims 2-27, 29-54, 55-61 are rejected based on their dependency on claim , 55 and 62 respectively.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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11. Claims 1-11, 13-14, 17-19, 21-27, 28-32, 33-38, 40-41, 44-46, 48-54, 55-57 and 60-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,802,045 issued to Sonderman et al (Sonderman hereafter), in view of IEEE article "Mathematic-physical engine: parallel processing for modeling and simulation of physical phenomena" by Jain et al (Jain hereafter).

Jain Reference has been provided with the previous office action.

Regarding Claim 1

Sonderman teaches a method to facilitate a process performed by a semiconductor-processing tool (Sonderman: Summary, at least in Col.2 Lines 10-17; Col.3 Lines 45-49) by inputting process data relating to the actual process performed by the semiconductor-processing tool (Sonderman: at least in Col.3 Lines 50-67; Col.7 Lines 8-20). Further, Sonderman teaches inputting the first principle physical model relating to the semiconductor-processing tool describing at least one of a basic physical or chemical attributes (Sonderman: at least in Col.5 Lines 11-17; 49-67) as device physics model, a process model and an equipment model. Further, Sonderman teaches performing first principle simulation using the input data and the physical model to provide virtual sensor measurements relating to the process performed by the semiconductor-processing tool (Sonderman: at least in Col.5-7). Further, Sonderman teaches using the virtual sensor measurements to facilitate the actual process being performed by the semiconductor-processing tool (Sonderman: at least in Col.4 Lines 48-64; Fig.1-8; Col.7 Lines 37-65).

Sonderman does not teach first principle model including a set of computer encoded differential equations.

Jain teaches computer encoded differential equations using MPE engine, which can be applied to wafer processing (Jain: Abstract). Jain also teaches dedicated and wafer level implementation of MPE engine to provide enhanced performance (Jain: Pg. 372 Section V Dedicated MPE).

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to apply the teachings of Jain to Sonderman to solve differential equation for the semiconductor processing tool. Sonderman teaches building various models, which work in real-time feedback control simulating actual semiconductor modeling process (Sonderman: Fig.1; Col.7 Lines 8-20), while Jain makes possible by providing model-solving capacity in real time when differential equations are present in the model (like thermal patterns in semiconductor wafer model) (Jain: Abstract).

Regarding Claim 2

Sonderman teaches directly inputting the process data relating to the actual process performed by the semiconductor-processing tool from at least one of physical sensor (eg. Scatterometry data, overlay data, dimensional data) and a metrology tool physically mounted on the semiconductor-processing tool (Sonderman: at least in Col.4 Lines 31-48; Col.4-8; Fig.1, 7; Col.7 Lines 8-20).

Regarding Claims 3-5

Sonderman teaches indirectly inputting the process data relating to the actual process performed by the semiconductor-processing tool from one of the manual input devices and a database as manual fashion data retrieval and automatic data retrieval; inputting data recorded from the previous run; inputting the data set by a simulation operator ((Sonderman: at least in Fig.1-3 Col.1; Col.4-7).

Regarding Claims 6-9

Sonderman teaches inputting process data relating to at least one of the physical characteristics of the semiconductor-processing tool and semiconductor tool environment, data relating to at least one of the characteristics and a result of a process performed by the semiconductor processing tool; inputting a spatially resolved model (as modified models) of the geometry of the semiconductor processing tool; inputting fundamental equations necessary to perform first principle simulation for the desired simulation result (Sonderman: at least in Col.5 Lines 10-18; Col.6 Lines 48-63; Col.9 (equations); Col.5-9; Fig 1-3).

Regarding Claim 10

Sonderman teaches performing interaction concurrently between the simulation environment (first principle simulation) and the semiconductor-processing tool (Sonderman: Fig.2; Col.4 Lines 48-63).

Regarding Claim 11

Sonderman teaches repeating the step of inputting the data from (physical sensor) metrology tool into first principle simulation and facilitating the semiconductor process concurrently with running the semiconductor process based on virtual

sensor measurements obtained during the semiconductor process (Sonderman: at least in Col.4 Lines 48-Col.5 Lines 10; Col.7 Lines 36-53; col.4-7).

Regarding Claims 13-14

Sonderman teaches performing first principle simulation not concurrently with the process performed; inputting data from at least one initial condition recorded from a previous process performed (Sonderman: at least in Col.5-8; Fig.3-4).

Regarding Claim 17

Sonderman teaches using virtual sensor measurements to characterize the semiconductor-processing tool (Sonderman: at least in Col.5 Lines 11-17; equipment model).

Regarding Claim 18

Sonderman teaches using virtual tool measurements to control the process performed by the semiconductor-processing tool (Sonderman: at least in Col.5 Lines 41-47).

Regarding Claim 19

Sonderman teaches using virtual sensor measurements to detect a fault in the process performed by the semiconductor-processing tool (Sonderman teaches: at least in Col.7, Fig 5-6).

Regarding Claims 21-25

Sonderman teaches using a network of interconnected resources to perform at least one of the process steps recited in claim 1; using code parallelization among interconnected computational resources to share the computational load of the first

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principle simulation; sharing simulation information among the interconnected resources to facilitate a process by the semiconductor-processing tool; sharing simulation results among the interconnected resources to reduce redundant execution of substantially similar first principle simulation by different resources; sharing information comprising model changes among the interconnected resources to reduce the redundant refinements of first simulation by different resources (Sonderman: Fig.1-3, computer code software is described in Col.9 Lines 58 onward; Col.5-8).

Regarding Claims 26-27

Sonderman teaches remote access to computational and storage resources (Sonderman: Col.9 Line 58-Col.10 Line 31) where in wide area network is art inherent.

Regarding Claim 28

System claim 28 discloses substantially similar limitations as method claim 1 and is rejected for the same reasons as claim 1.

Regarding Claim 29

System claim 29 discloses substantially similar limitations as method claim 2 and is rejected for the same reasons as claim 2.

Regarding Claims 30-32

System claims 30-32 disclose substantially similar limitations as method claims 3-5 and are rejected for the same reasons as claims 3-5.

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Regarding Claims 33-36

System claims 33-36 disclose substantially similar limitations as method claims 6-9 and are rejected for the same reasons as claims 6-9.

Regarding Claim 37

System claim 37 discloses substantially similar limitations as method claim 10 and is rejected for the same reasons as claim 10.

Regarding Claim 38

System claim 38 discloses substantially similar limitations as method claim 11 and is rejected for the same reasons as claim 11.

Regarding Claims 40-41 and 61

System claims 40-41 and 61 disclose substantially similar limitations as method claims 13-14 and are rejected for the same reasons as claims 13-14.

Regarding Claim 44

System claim 44 discloses substantially similar limitations as method claim 17 and is rejected for the same reasons as claim 17.

Regarding Claim 45

System claim 45 discloses substantially similar limitations as method claim 18 and is rejected for the same reasons as claim 18.

Regarding Claim 46

System claim 46 discloses substantially similar limitations as method claim 19 and is rejected for the same reasons as claim 19.

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Regarding Claims 48-52

System claims 48-52 disclose substantially similar limitations as method claims 21-25 and are rejected for the same reasons as claims 21-25.

Regarding Claims 53-54

System claims 53-54 disclose substantially similar limitations as method claims 26-27 and are rejected for the same reasons as claims 26-27.

Regarding Claim 55

System claim 55 discloses substantially similar limitations as method claim 1 and is rejected for the same reasons as claim 1.

Regarding Claim 56

System claim 56 discloses substantially similar limitations as method claim 10 and is rejected for the same reasons as claim 10.

Regarding Claim 57

System claim 57 discloses substantially similar limitations as method claim 11 and is rejected for the same reasons as claim 11.

Regarding Claim 60

System claim 60 discloses substantially similar limitations as method claim 22 and is rejected for the same reasons as claim 22.

Regarding Claim 62

System claim 62 discloses substantially similar limitations as method claim 1 and is rejected for the same reasons as claim 1.

12. Claims 12, 15-16, 20, 39, 42-43, 47, 58-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,802,045 issued to Sonderman et al (Sonderman hereafter), in view of IEEE article "Mathematic-physical engine: parallel processing for modeling and simulation of physical phenomena" by Jain et al (Jain hereafter), further in view of U.S. Patent No. 5,719,796 issued to Vincent M.C. Chen (Chen hereafter).

Regarding Claim 12

Teachings of Sonderman & Jain are disclosed in claim 1 rejection above.

Sonderman teaches setting boundary condition for first principle simulation through the process parameters (Sonderman: at least in Col.5-6).

Sonderman & Jain do not teach performing time dependent concurrent simulation without direct input from semiconductor process to facilitate semiconductor process based on virtual sensor measurement.

Chen teaches time dependent concurrent simulation without direct input from semiconductor process and applies the result to facilitate the semiconductor process concurrently with running the semiconductor process based on virtual sensor measurements obtained during the semiconductor process. Chen teaches simulation based on the statistical data, which in turn provides the output to actual fabrication process (Chen: at least in Col.3 Lines 12-18).

Motivation to combine Jain to Sonderman is provided above in claim 1 rejection.

It would have been obvious to one (e.g. a designer) of ordinary skill in the art at the time the invention was made to apply the teachings of Chen to Sonderman. The

motivation to combine would have been that Chen and Sonderman both are analogous art concerned with simulating the semiconductor fabrication process and providing the best control parameters to the actual semiconductor-processing tool (Chen: at least in Col.3 Lines 19-23). Chen facilitates in building the process model that can be run in parallel to actual process thereby providing more specific embodiment to Sonderman's teachings (Chen: Col.3 Lines 12-24).

Regarding Claim 15

Chen teaches indirectly putting best-known input parameters for the physical model (Chen: at least in Col.3 Lines 19-23).

Regarding Claim 16

Chen teaches comparing virtual sensor measurements with the actual sensor measurements and refining at least one best known input parameters and the physical model to obtain better agreement between the virtual sensor measurements with actual sensor measurements (Chen: at least in Col.3 Lines 48-57; Calibrate run calibrate simulated).

Regarding Claim 20

Chen teaches storing virtual sensor measurement in a library for subsequent use in a first principle simulation (Chen: at least in Col.3; Specifically in Col.3 Lines 37-41).

Regarding Claim 39

System claim 39 discloses substantially similar limitations as method claim 12 and is rejected for the same reasons as claim 12.

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Regarding Claim 42

System claim 42 discloses substantially similar limitations as method claim 15 and is rejected for the same reasons as claim 15.

Regarding Claim 43

System claim 43 discloses substantially similar limitations as method claim 16 and is rejected for the same reasons as claim 16.

Regarding Claim 47

System claim 47 discloses substantially similar limitations as method claim 20 and is rejected for the same reasons as claim 20.

Regarding Claim 58

System claim 58 discloses substantially similar limitations as method claim 12 and is rejected for the same reasons as claim 12.

Regarding Claim 59

System claim 59 discloses substantially similar limitations as method claim 16 and is rejected for the same reasons as claim 16.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akash Saxena whose telephone number is (571) 272-8351. The examiner can normally be reached on 9:30 - 6:00 PM M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini S. Shah can be reached on (571)272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Akash Saxena
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Friday, March 03, 2006


Fred Ferris, GAU 2128
Primary Examiner